2017 Stream Survey Report

COMET CREEK

Rotation (WBIC 285600)

Marathon, Shawano, Waupaca County

Prepared by Joe Dax

Introduction and Objectives

Comet Creek is a 26.6 mile stream with its entire length being Class I trout waters. Comet Creek originates in Marathon county, flows southeast through the southwest corner of Shawano County, and eventually continues into Waupaca County where it is a tributary to the Little Wolf River. Fifteen public road crossing provide fishing access to Comet Creek. Objectives of the rotation surveys are to determine species composition, relative abundance, and size structure for trout and other gamefish present.

Regulations Category: Red **Size Limit:** Brown and Rainbow Trout over 12" Brook Trout over 8" **Daily Bag Limit:** 3 (in total)

WISCONSIN DNR CONTACT INFO.

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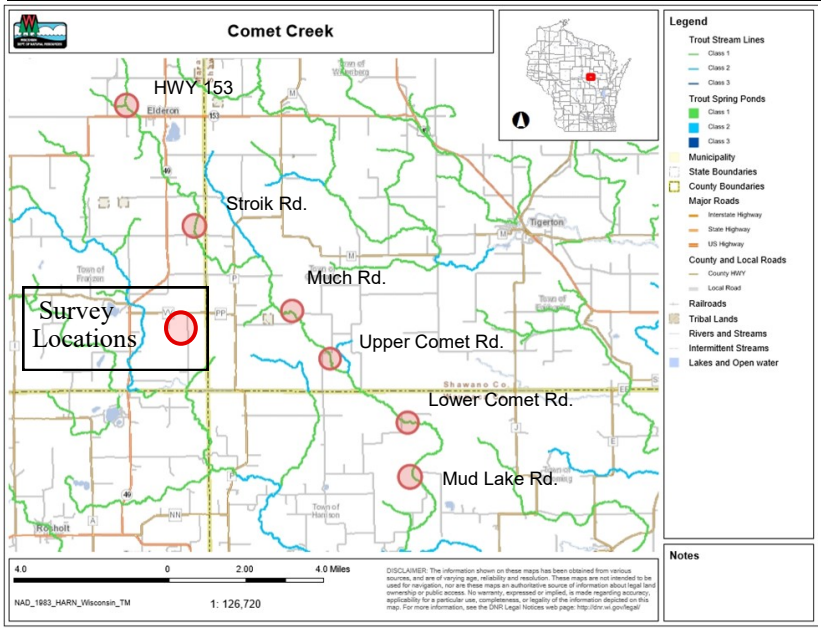
Survey Information

Station	Survey Date	Station Length	Temperature (°F)	Mean Stream Width	GPS (Start/Finish)	Gear	Number of Netters	Index of Biotic Integrity
Much Rd	07/27/2017	742 ft	60	21.2 ft	44.70818, -89.17590 44.70932, -89.17715	Tow-Barge Shocker	3	No
Stroik Rd.	08/10/2017	553 ft	59	15.8 ft	44.73150, -89.22900 44.74046, -89.22961	Tow-Barge Shocker	3	No
Upper Comet Rd.	07/25/2017	833 ft	58	23.8 ft	44.69310, -89.15925 44.69492, -89.16030	Tow-Barge Shocker	3	No
Mud Lake Rd.	07/25/2017	1,011 ft	59	28.9 ft	44.64415, -89.11041 44.64608, -89.11217	Tow-Barge Shocker	3	No
Lower Comet Rd.	07/25/2017	848 ft	59	24.0 ft	44.66875, -89.12109 44.66991, -89.12251	Tow-Barge Shocker	3	Yes
Hwy 153	08/10/2017	563 ft	58	16.1 ft	44.78384, -89.25844 44.78464, -89.25964	Tow-Barge Shocker	3	No



Survey Method

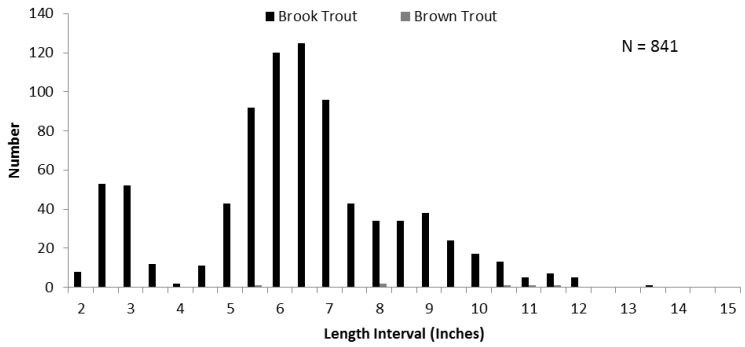
- All streams are sampled according to WDNR wadeable streams monitoring protocols. Comet Creek is on a six year rotation schedule with six sites identified for the segment of stream in Marathon, Shawano, and Waupaca County.
- All sampling stations are electrofished with either a towed barge shocker or backpack shocker.
- Sampling distance is at least 35 times the mean stream width or a minimum of 330 ft.(100 meters).
- All trout and other gamefish are measured for length and examined for fin-clips.
- In at least one stream segment (if multiple stations are being sampled) all fish species are collected and counted for calculation of an Index of Biotic Integrity (IBI).
- Metrics used to describe trout populations include average length, catch per unit effort (CPUE), and length frequency distributions.

Metric Descriptions

- **Catch per unit effort (CPUE)** is a method of quantifying fish population relative abundance. For all trout surveys, we typically quantify CPUE as the number of a given size class of trout captured per mile of stream. CPUE indexes are compared to other trout streams throughout the state of Wisconsin by what percentile (PCTL) they fall out in . For example, if a CPUE is in the 90th percentile, it is higher than 90% of the other CPUEs in the state. CPUE percentiles can also be used to categorize trout abundance as low density (<33rd percentile), moderate density (33rd - 66th percentile), high density (66th - 90th percentile), and very high density (> 90th percentile).
- **Index of Biotic Integrity (IBI)** is a rating of environmental quality based on the fish assemblage. Scores of 90-100 indicate excellent stream quality while scores less than 30 indicate poor stream quality. Our analysis utilizes the IBI for Wisconsin coldwater streams. Coldwater streams in Wisconsin are those in which the maximum daily mean water temperature is usually <22°C (71.6°F). A coolwater stream IBI may also be used when a stream doesn't fit the temperature criteria for a coldwater stream.
- **Length frequency distribution** is a graphical representation of the number or percentage of fish captured by half inch or one inch size intervals.

Size and Abundance (CPUE) Metrics										
Station	Species	Total Number Sampled	Average Length (inches)	Length Range (inches)	CPUE calculated as the number of trout of a given size per mile (Number in parentheses represents the statewide percentile of a given metric)					
					Total CPUE (PCTL)	YOY CPUE	≥5" CPUE (PCTL)	≥8" CPUE (PCTL)	≥10" CPUE (PCTL)	≥12" CPUE (PCTL)
Much Rd	Brook trout	171	6.0	(2.3 - 10.7)	1,217 (90th)	234	964 (97th)	135 (92nd)	21 (87th)	-
Stroik Rd.	Brook trout	130	6.5	(2.4 - 11.8)	1,241 (90th)	180	1,000 (97th)	285 (97th)	57 (97th)	-
Upper Comet Rd.	Brook trout	178	6.4	(2.6 - 12.4)	1,128 (89th)	203	917 (96th)	171 (94th)	51 (96th)	13 (97th)
Mud Lake Rd.	Brook trout	124	6.7	(2.3 - 12.4)	542 (74th)	104	526 (90th)	203 (96th)	58 (97th)	5 (91st)
Lower Comet Rd.	Brook trout	161	7.5	(2.6 - 13.7)	1,012 (87th)	31	981 (97th)	270 (97th)	113 (99th)	19 (98th)
Hwy 153	Brook trout	71	6.2	(2.2 - 10.6)	665 (78th)	150	505 (90th)	187 (95th)	19 (87th)	-

Brook and Brown Trout Length Distribution



Mottled sculpin (pictured above) is a small nongame species commonly found in coldwater streams. Similar to trout they require colder temperatures, are considered thermally intolerant, are sensitive to perturbations such as siltation in the stream, and their presence can be indicative of healthier environmental quality.

Species Community and IBI for Lower Comet Rd.			
Species Sampled	Total	IBI Score	Integrity Rating
BLUEGILL	3	Coldwater: 80	Coldwater: Good
BROOK TROUT	161		
CENTRAL MUDMINNOW	63		
CREEK CHUB	15		
JOHNNY DARTER	4		
MOTTLED SCULPIN	25		
NORTHERN PEARL DACE	9		
WESTERN BLACKNOSE DACE	8		
WHITE SUCKER	21		
YELLOW PERCH	1		

Summary

- Brook trout density in Comet Creek was high to very high at all six sites with every percentile being in the 74th or higher two in the 90th percentile or higher.
- Young of year (YOY) density was also found at moderate levels.
- Comet Creek provides a great brook trout fishery with the density of brook trout >8 in being above the 92nd percentile at all six sites, brook trout > 10 inches were captured at all six sites, and brook trout >12 inches captured at three sites.
- Low numbers of brown trout were sampled in the Comet Creek, but they were only captured at two of the three lower sites, Mud Lake Rd. and Upper Comet Rd.
- Comet Creek has good coldwater environmental conditions as indicated by the Index of Biological Integrity at Lower Comet Rd.
- Since the last survey in 2011, total brook trout densities have remained similar but size structure has increased. For example, at the Much Rd. site, the overall density of brook trout in 2017 was similar to what was observed in 2011, but the density of brook trout >8" increased by 111%. Additionally, no brook trout >10" were captured at Much Rd. in 2011 compared to three in the 2017 survey. Furthermore, at Upper Comet Rd., brook trout CPUE in 2017 was at least 50% higher than what was observed in 2011 for all size classes.